

Claims

We claim:

1. A method for maintaining the power delivered by a motor including at least one phase coil, the method comprising the steps of:

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sensing a speed of said motor; and

varying the inductance of said phase coil based on said sensed speed.

- 10 2. The method of claim 1, wherein the step of varying the inductance of said phase coil includes the step of varying the number of turns of said phase coil from a first number of turns to a second number of turns.

- 15 3. The method of claim 2, wherein the step of varying the inductance of said phase coil is carried out by switching the number of turns of said phase coil from a first value to a second value.

- 20 4. The method of claim 3, wherein the switching is carried out when said sensed speed reaches a reference speed.

5. The method of claim 3 wherein the switching is carried out when said sensed speed is about the speed at which saturation of a core of a phase coil of said motor occurs.

- 25 6. The method of claim 4 wherein said reference speed is the motor speed at which the motor force corresponding to a first number of turns (T_1) of said phase coil is about the same as the motor force corresponding to a second number of turns (T_2) of said phase coil.

7. The method of claim 1 further including a step of compensating said motor for said varying inductance of said phase coil.

5 8. The method of claim 1 wherein said motor is a variable reluctance motor.

9. The method of claim 8 wherein said variable reluctance motor is a linear motor.

10. The method of claim 8 wherein said variable reluctance motor is a rotary motor.

10 11. In a motor including at least one phase coil, a system for maintaining motor power comprising:

15 a sensor coupled to said motor, said sensor providing a feedback signal representative of a speed of said motor;

a comparing circuit for comparison of said feedback signal to a reference signal and for providing a switching signal based on the results of said comparison;

20 a switch coupled to said comparing circuit and responsive to said switching signal such that the number of turns of said phase coil is switched from a first value to a second value depending on the value of said feedback signal.

12. A motor system including at least one phase coil having a first number of turns, said system comprising:

a motor speed sensor coupled to said motor for sensing a speed of said motor;

25 a switch coupled to said phase coil of said motor;

a driving circuit coupled to said motor speed sensor and to said switch such that said switch switches the number of turns of said phase coil from said first number to a second number when said speed of said motor reaches a reference value.